

A Study on the Whole Industry Chain Development of Hezhang Walnut under the Background of Rural Revitalization Strategy

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Abstract: “Industrial prosperity” is the primary task of implementing the Rural Revitalization Strategy and the important foundation of consolidating the achievements of poverty alleviation. In order to promote the optimization and upgrading of Hezhang walnut industry, based on the background of Rural Revitalization Strategy, this paper takes the perspective of the whole industry chain theory, analyzes the problems of low degree of production organization in Hezhang County, Guizhou Province, and puts forward some countermeasures such as improving infrastructure construction. The development of Hezhang walnut whole industry chain is helpful to promote the sustainable development of both society and economy in Wumeng Mountain area, and provide beneficial reference for the anti-poverty of contiguous destitute areas in China.

1. Introduction

Rural Revitalization Strategy is an important strategic measure of the CPC Central Committee to solve the Three Rural Issues in the new era, in which industrial prosperity is an important premise and basis for the implementation of the strategy. In recent years, with the deepening of the new scientific and technological revolution, the global industry chain has entered the stage of reconstruction and integration. Relying on local resource endowment, building the dual value chain linking home and abroad, and building the advantageous characteristic industry system promoting each other with domestic and international dual circulation are the strategic choices to further consolidate and expand the achievements of poverty alleviation and promote the sustainable development of rural economy. According to Li Nan and Huang He, agriculture is the basic and livelihood industry in poverty-stricken areas, and a considerable part of the poor people need to rely on the development of production to get rid of poverty.^[1] As the basic industry in most rural areas, whether the development of agriculture is “prosperous” or not is an important factor to determine the revitalization of rural areas. The “backward circulation system of agricultural products” and “backward mode of production” are the urgent problems to be solved in the agricultural development of rural areas in China. Wang Yuan believes that the whole industry chain mode can effectively improve the circulation efficiency of agricultural products, which is of great significance for agricultural development.^[2] In other words, the whole industry chain mode of agriculture will effectively promote rural revitalization.

The agricultural whole industry chain mode is a high-standard, compound and modern development mode. Han Xiyan, Gao Zhifeng and Liu Wei believe that the agricultural whole industrial chain mode is a complete industrial chain system formed by expanding the business scope to the upstream and downstream of the industrial chain, and integrating the resource supply, production, processing, transportation, sales and marketing of agricultural products into the same enterprise organization for the purpose of meeting the consumption demand.^[3] The characteristics of the agricultural whole industry chain mode are vertical integration and close diversification. Vertical integration refers to the whole process control of products, services and information in an

industry chain by the same enterprise. Close diversification refers to the horizontal and close connection of different industry chains to achieve the integration of “production, supply and marketing”. Li Guoying believes that close cooperation among the business entities can promote the industrial scale and integration, which is of great significance to the integration of industry and the improvement of the competitiveness of the whole agricultural industry chain.^[4] Therefore, the whole agricultural industry chain mode is conducive to solve the contradiction between “small production”, “small circulation” and “big market” faced by agriculture in China. Ni Bingli thinks that with the innovation mode of “Internet + modern agriculture”, the current circulation system of the agricultural products can enable more stakeholders to get more producer surplus and promote the modernization, standardization, branding and capitalization of the agricultural industry.^[5] Expanding the circulation industry chain of agricultural products and building a modern circulation system of agricultural products by using the whole industry chain mode are the fundamental methods to solve the current circulation problems and promote the upgrading of rural industries.

2. General Situation of Walnut Industry Development in Hezhang County

Hezhang County is affiliated to Bijie City, Guizhou Province, and is located in the slope area of Wumeng Mountain area. It has rich walnut germplasm resources and long planting history. Hezhang County has high altitude, plenty of light and large temperature difference. The highest altitude is 2900.6m, which is the highest point in Guizhou. The unique microclimate is particularly suitable for walnut growth. Therefore, Hezhang walnut has the characteristics of thin shell, plump kernel, easy to extract kernel and pure flavor, and it is one of the agricultural products exported. In recent years, the walnut industry in Hezhang has developed rapidly. In February 2012, the State Forestry Administration issued *The Notice on the Release of the Second Batch of National Key Forest Seed Bases*, and Hezhang County was listed as “national walnut seed base”. In February 2013, the General Administration of Quality Supervision, Inspection and Quarantine of the People’s Republic of China approved the walnut of Hezhang as “national geographic indication protection product”.^[6] In 2016, Hezhang County cooperated with Agricultural College of Guizhou University to carry out key research and development of walnut technology, and successfully formulated nine standards for walnut planting technology. And the grafting technology of walnut green branch was awarded the “invention patent certificate” issued by the State Intellectual Property Office. At present, Hezhang County, as the main producing area of Guizhou walnut, has cultivated four local excellent varieties, such as Qianhe 5, which meet the international special grade commercial walnut standards. The county planted 1.13 million mu of walnut, including 460000 mu of concentrative areas. The annual output of nuts is 38400 tons, forming an industry with an annual output value of 1.5 billion yuan, and the output value of walnut deep processing industry is nearly 500 million yuan. However, as a county just out of poverty, Hezhang is short of industrial development foundation, and it is facing great ecological environment pressure while developing economy. Since walnut industry is an industry chain integrating the cultivation of walnut seedlings in the upstream, walnut processing and R & D in the middle reaches and the sale of walnut products in the downstream, the upstream, middle reaches and downstream are closely related, which is very suitable for developing the whole industry chain mode. Moreover, the large-scale planting of walnut forest is conducive to implementing national projects such as “returning farmland to forest”, comprehensive development in mountainous areas, realizing the unification of ecological and economic benefits, and effectively promoting the realization of Rural Revitalization Strategy in Hezhang area and even Wumeng Mountain area.

3. Problems in the Development of Walnut Industry in Hezhang County

3.1. Low Degree of Production Organization and Standardization

The walnut planting area of Hezhang County is large, and all 30 towns (streets) of the county plant walnut, which is widely distributed. However, the infrastructure in the county is relatively

backward, and the rationalization level of commodity transportation organization is low. Moreover, the level of continued construction and modernization of large and medium-sized irrigation districts in the county is low. There are only six power stations such as Xiaohe power station, which is not conducive to the organization of walnut production. In addition, the farmers are restricted by the low level of cultural education (According to the statistics of 2019, less than one quarter of the population in Guizhou Province has high school education or above. As one of the poorest counties in Guizhou Province, the education level of Hezhang County is even less ideal), farmers' production concept is backward and their willingness to cooperate with leading enterprises is not strong. At present, there are only more than ten rather large enterprises mainly based on Guizhou Hezhilin Food and Beverage Co., Ltd. and more than 30 professional cooperatives in Hezhang County. Compared with the 13 leading enterprises and 328 famous walnut producing areas in famous walnut producing area Dayao County, Yunnan Province, there is still a big gap between walnut industry of Hezhang County and that of Dayao County. Therefore, most of the walnut in Hezhang is operated and planted by growers themselves. In addition, the large number of labor force loss makes the walnut industry face a large labor gap. In 2020, the labor force of Bijie City, where Hezhang County is located, outputted 2 million people. The low level of production organization makes it difficult to unify varieties, management and technical standards in walnut production process, thus leading to the great difference in the variety, quality and appearance of the dried walnut fruit.

3.2. Weak Processing Chain and Low Processing Degree

In terms of production, there is no unified walnut primary processing network in Hezhang County. Most farmers dry and bake walnuts by themselves, mainly producing fresh walnut fruit and other primary raw products, and selling nearly 70% of the raw materials^[7]. The comprehensive development and utilization rate of walnut skin, shell and other resources is low. The processing degree is low and the processing technology is relatively backward. The degree of automation and intelligence is low, resulting in high labor costs, and the quality of the walnut can't be guaranteed, lacking market competitiveness. Limited by the local relatively backward infrastructure and other factors, Hezhang walnut production is not high, difficult to attract large walnut processing enterprises at home and abroad. At present, only a few domestic intensive processing enterprises such as Guizhou Hezhilin Food and Beverage Co., Ltd., Jinguoyuan Walnut Industry Co., Ltd. and Limin Food have been introduced to develop and produce 5 walnut milk series products, 4 walnut sugar products and more than 40 kinds of walnut handicrafts. The output of Hezhang walnut deep processing and other industrial processing products is only 1000 tons, and the output value is only about 500 million yuan. Compared with Yecheng County in Xinjiang, where "walnut kernel is not only processed into more than 20 kinds of food such as walnut cakes, walnut shell is processed into activated carbon, and distracted wood is processed into health tea", Hezhang walnut product processing degree is low, which is far from achieving substantial value-added and income increase.

3.3. Less Marketing Channels and Weak Brand Construction

The infrastructure of Hezhang County is relatively backward. There are only three highways in the county, such as Biwei expressway, and there is no train or high-speed railway. The relatively closed traffic hinders the sales of Hezhang walnut. Moreover, there is only one walnut comprehensive professional trading market in Hezhang County, and the circulation channel of walnut products is small and narrow, which is mainly composed of production and marketing, can't meet the needs of modern market economy. Although the walnut products of Hezhang are sold in some e-commerce platforms and physical stores, the marketing ideas are limited, which are embodied in the backward advertising design concept and less advertising investment. The total monthly sales of Dayao walnut, Yunnan Province, in 11 major sales stores of Taobao and Pinduoduo platforms in January 2021 was 7000, but the total monthly sales of Hezhang walnut in the two platforms was only 2400. In summary, walnut network stores are not fully developed. The quality and variety of Hezhang walnut nuts are not the same, which is difficult to meet the quality requirements of local large-scale supermarkets, failing to enter the large-scale supermarkets. Therefore, Hezhang walnut lacks stable and developed circulation channels, difficult to achieve

stable income increase of walnut growers.

Hezhang walnut industry pays more attention to production than marketing. At present, there are only two regional well-known leading enterprises in Hezhang County, which have no prominent characteristics, but have low awareness of brand building, imperfect brand support system, and fail to form a good brand building atmosphere and strong influence. Although the trademark of leading enterprise “Hezhilin” has been rated as “famous trademark of Guizhou Province” and has a high popularity in Guizhou Province along with the enterprise brand “Hexiangguo”, on the whole, Hezhang walnut lacks the enterprise brand with strong influence. Hezhang walnut has a low popularity and market share in the whole country, and is only sold in a few provinces and cities. There is still a big gap in the popularity of Hezhang walnut and Xinjiang, Yunnan, Hebei and other places. At present, Hezhang walnut has a low brand effect and its marketing channels are not smooth, which can’t effectively improve the economic benefits.

4. Suggestions on the Whole Industry Chain Development of Hezhang Walnut

At present, Hezhang walnut industry has big problems in three major links, including walnut planting, processing and marketing. In order to solve the above problems and promote the “prosperity” of Hezhang walnut industry, it is necessary to establish the whole walnut industry chain mode, open up and link the walnut industry chain from the horizontal and vertical angles of the whole industry chain, and implement the three-industry integration development.

4.1. Improve Infrastructure Construction and Promote Horizontal Extension of Industry Chain

The relatively backward infrastructure construction seriously restricts the production of Hezhang walnut. It is necessary to improve the transportation, water conservancy and other infrastructure construction to promote the horizontal extension of Hezhang walnut industry chain. Specifically, we should promote the construction of transportation infrastructure, rectify and build new rural roads, solve the problem of engineering water shortage, improve the water supply rate of walnut planting area, and cultivate walnut according to different varieties, so as to facilitate the promotion of walnut planting technology and production standards, and improve the standardization level of production.

After the infrastructure construction reaches a certain level, Hezhang walnut should comply with the development requirements of green, ecological and environmental protection, make use of the productive, sightseeing and entertainment characteristics of modern agriculture, actively develop new business forms such as ecological agriculture, and broaden the production links from a horizontal perspective. We can use walnut forest resources to develop economic crops under walnut forest, and take farming instead of caring to improve the comprehensive output of land. We should vigorously develop the economy of forestry, poultry and livestock, and realize the combination of planting and breeding, and circular development. In addition, the mountainous and humid natural conditions in Hezhang area are very conducive to the growth of fungi and Chinese herbal medicine, which is suitable for the development of a certain scale of forest-medicine economy and forest-fungus economy. At the same time, in view of the large area of walnut forest and a certain well-known “Jiupaiping” scenic spot in Hezhang, we can combine forest-poultry, forest-livestock-agriculture with interesting agriculture and tourism agriculture, integrate walnut elements with folk customs and Yelang (a kind of southwest culture) culture elements, develop walnut culture, tourism, leisure and health industry, and promote the sustainable development of Hezhang walnut industry.

4.2. Improve the Deep Processing Level and Promote the Vertical Extension of Industry Chain

In order to play its role, the whole walnut industry chain mode also needs to make the industry chain extend forward and backward from a vertical perspective, with the emphasis on processing industry. We should increase the proportion of walnut intensive processing by improving the integration level of production, teaching and research, make full use of walnut skin and other resources, enrich the variety of walnut products, and produce and process walnut food, oil, medicine

and other products with higher quality, such as *Diaphragma juglandis* tea, walnut shell activated carbon, dyes, handicrafts and so on. Due to the large profit margin of cultural products and the variety of Hezhang walnuts, we can cultivate a high-level design team of walnut crafts, design high-grade walnut crafts and cultural walnuts, and develop the cultural walnut industry.

The vertical extension of Hezhang walnut industry chain must take the enterprise as the carrier and play the leading role of key enterprises. The state-owned enterprises in the county can be built into the leading enterprises of walnut industry development in the county, the development platforms of walnut industry chain, and the walnut intensive processing companies can be established under the state-owned enterprises. In view of the current Hezhang walnut planting concentration is not high and walnut workshops account for the majority of walnut product operators, in the processing, leading enterprises can focus on the deep processing of walnut, and establish a cooperative relationship with small and medium-sized workshops, so that small and medium-sized workshops can undertake the function of walnut rough processing, give full play to the resource integration advantages of leading enterprises and the cost advantages of small and medium-sized workshops, and promote the walnut value chain to upgrade.

4.3. Expand Trade Channels, Promote Brand Building and Increase the Thickness of Industry Chain

The whole industry chain mode requires the integration of production, supply and sales. At present, the main trade channels of Hezhang walnut products are direct selling and single link direct selling. Although these two kinds of trade channels are beneficial for the leading enterprises to directly control the marketing of products and reduce the circulation costs, in view of the weak brand effect and marketing ability of Hezhang walnut leading enterprises, it is difficult for walnut products to open the out-of-province and even international markets only by direct selling channels. Therefore, it is necessary to newly build, revise and rebuild the trade channels. We can start from the following three aspects. First, in large and medium-sized cities in China, we should take the form of principal-agent sales and joint sales to build new trade channels, build sales network of walnut products physical stores, and expand retail outlets. Second, we can set up walnut stores, chain stores and franchise stores with unified logo, learn from the “self-construction + M & A” and “self-operation + franchise” modes of thin-skinned walnut in Hetian County, Xinjiang, to revise and rebuild the trade channels and rapidly expand the market scale. Third, we can actively cooperate with various e-commerce platforms to carry out new sales methods such as live broadcast. In the information age where data is king, Hezhang walnut must adapt to and integrate into the “live” economy.

The brand building of Hezhang walnut industry is divided into two parts: one is the brand building of new walnut products (such as walnut wine, walnut cake, etc.), and the other is the brand building of new walnut formats (such as walnut sightseeing agriculture, walnut health care industry).

In the brand building of walnut products, we should actively promote the registration of “China famous trademark” of walnut products, apply for certification of organic food, national geographical indication protection products, etc., and create independent intellectual property brand products and national brand products. As Internet sales are becoming an important channel of agricultural products sales, and the main body of online shopping is young people, Hezhang walnut can learn from the famous Internet dried fruit brand “Three Squirrels” and “Baicaowei” brand construction experience, and make full use of ethnic minority culture, combine the cultural elements of Yelang with walnut cartoon image design and product novel packaging to attract young consumer groups, form “health + cultural innovation” product concept and a unified walnut brand to meet the emerging consumers who not only pay attention to nutrition but also the pursuit of novelty and fashion. At present, there is no Internet dried fruit brand that combines nut marketing with traditional Chinese minority culture. The new products of “health + cultural innovation” can cultivate new consumption and quickly occupy market share.

In terms of brand construction of new walnut business form, Hezhang walnut has a long history

of planting and has been planted in the county for a hundred years. We can rely on rich walnut cultural and historical resources and human resources, cultivate walnut brands with unified identification involving cultural tourism, health care, catering and other industries to build walnut town and walnut culture village. Combining the folk customs and the walnut culture elements, we can develop the walnut catering industry in the “radiation zone” unsuitable for large-scale planting of walnut, because the zone has less walnut planting area, less area of good varieties, imperfect infrastructure and low organization level. In the areas where walnut is not planted, cultural landmarks such as walnut museums and walnut product exhibition halls can be built to develop walnut culture industry. The brand effect brought by the sub brands of unified walnut brand can promote the integrated development of the industry in Hezhang, strengthen the walnut industry chain, strengthen the control of the core enterprises on the walnut industry chain and improve the integration degree of “production, supply and marketing” of the relevant industries, so as to promote the transformation and upgrading of the whole industry in Hezhang.

5. Conclusion

By improving the infrastructure construction, enhancing the level of walnut deep processing, broadening trade channels and promoting brand building, extending and thickening the walnut industry chain, the development level of the whole industry chain of Hezhang walnut can be improved, which is conducive to the improvement of the production efficiency and economic benefits of Hezhang walnut industry, the prosperity of the industry, the promotion of poverty alleviation, the revitalization of rural areas and the development of Hezhang area, and the sustainable development of economy and society in Wumeng Mountain area.

References

- [1] Li Nan, Huang He. Value Implication and Internal Logic of Effective Connection between Poverty Alleviation and Rural Revitalization. *Party Building and Ideological Education in Schools*, no.22, pp.90-92, 2020.
- [2] Wang Yuan. Reconstruction and Efficiency Analysis of Agricultural Product Circulation Mode from the Perspective of the Whole Industrial Chain. *Business Economy Research*, no.3, pp.142-144, 2020.
- [3] Han Xiyan, Gao Zhifeng, Liu Wei. Mechanism of Promoting Agricultural Product Circulation by the Whole Industrial Chain Mode: Theoretical Mode and Case Study. *Agricultural Technology Economy*, no.4, pp.55-70, 2019.
- [4] Li Guoying. Path of Modern Rural Industrial System Construction from the Perspective of Rural Revitalization Strategy. *Contemporary Economic Management*, no.10, pp.34-40, 2019.
- [5] Ni Bingli. Innovation of the Development Mode of the Whole Agricultural Industry Chain in the Era of Internet Plus.. *Business Economics Research*, no.21, pp.85-88, 2020.
- [6] Sun Chao, Guo Yahui, Wang Mengyu, Dan Zhipeng. The Present Situation and Strategy of Walnut Industry Development in Guizhou: Taking Hezhang County as An Example. *Guizhou Agricultural Science*, no.10, pp.165-167, 2020.
- [7] Sun Wei, Zhang Qian, Xu Tun, Lei Yuanyin, Wang Tingju. The Present Situation and Countermeasures of Walnut Industry Development in Yemachuan Town, Hezhang County. *Rural Science and Technology*, no.31, pp.41-43, 2019.